FOR HERS RATERS

The job of a HERS rater is not easy and often spans many responsibilities. Raters can serve as energy modelers, building science experts, building products experts, home inspectors, system designers, trainers of the trades, and guarantors of home performance. When it comes to insulation and air sealing, NAIMA offers the information and tools to tackle these many roles.

Achieving Grade 1 Insulation Installation

One of the jobs of a HERS rater is determining if a Grade 1 insulation installation has been achieved. Visit the Grade 1 page for access to a variety of tools and resources to help ensure **Grade 1 installation**—including **video tutorials** and **pictorial guides** of how to install insulation batts that meets the designations high standards.

Understanding Compression and R-values

Cavity size can result in compression which in turn can impact R-value. When you compress fiberglass batt insulation, the R-value per inch goes up, but the overall R-value goes down because you have less inches or thickness of insulation.

The formula below can be used to arrive at the compressed R-value for fiberglass batt insulation[1]. This formula, along with an R-value chart, showing compression by cavity size, can also be found **here**.

Example: Let's look at an R-19 batt in a 2×6 cavity

Step 1: subtract the cavity depth from the thickness of the batt (in inches).

Ex. 6.25(batt) – 5.5 (cavity depth) = 0.75"

Step 2: take that resulting figure and divide by the thickness of the batt to determine the percent compression.

Ex. 0.75 / 6.25 = 0.12, or 12% compression

Step 3: R value decreases by roughly half the percentage of compression. So, to determine the R-value loss of a batt due to compression, you multiply the batt's R-value by half the percent compression.

Ex. 19 x 6% = 1.14

Step 4: subtract the R-value loss figure from the R-value of the batt to arrive at the compressed R-value.

Ex. 19 – 1.14 = 17.86, rounded up is R-18

Compression and RESNET Grading

It is also important to recognize that once a compressed R-value is applied for a cavity, the RESNET grading criteria do not require that the installation be given Grade 2 or 3. Doing so would amount to a "double penalty" for the same performance loss. Absent other defects, a batt installed with compression, but assigned an appropriate compressed R-value, can be a Grade 1 insulation installation.

Comparing Insulation Options

Raters can be called upon to provide building recommendations on air sealing and insulation packages. Because of this, it is important that raters have the latest, most accurate information to inform sound recommendations.

Comprehensive Comparison of Insulation

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1. The calculation formula to predict R-value reductions due to compression set forth herein is representative of fiber glass building insulation generally, but specific company products may vary slightly. This calculation formula is provided for informational purposes and a general guidance. NAIMA neither warrants or guarantees any of its members' products, nor does it assume any liability for any of its members' insulation products. Use of the compression calculation formula for predicting R-value reductions due to compression does not ensure or guarantee a specific level of insulation performance. The calculation method is provided as a tool to help predict or estimate possible R-value reductions due to compression. NAIMA makes no warranty or guarantee whatsoever of this calculation formula. NAIMA assumes no responsibility for your use of this information.